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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,950	12/08/2000	Colin Watts	ERP01.004A	2538

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EXAMINER

VANDERVEGT, FRANCOIS P

ART UNIT

PAPER NUMBER

1644

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/646,950

Applicant(s)

WATTS, COLIN

Examiner

F. Pierre VanderVegt

Art Unit

1644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8-20, 38-42 and 52-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-20, 38-42 and 52-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02262001, 09252000
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

This application is a rule 371 continuation of PCT Serial Number PCT/GB99/00963.

Claims 5-7, 21-37 and 43-51 have been canceled.

New claims 57-61 have been added.

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-42 and 52-56, in the reply filed on November 3, 2003 is acknowledged.

Applicant's election without traverse of the species "treatment of autoimmune diseases" in the reply filed on November 3, 2003 is acknowledged.

Upon further review, the **species requirement is withdrawn**.

It is noted that claims 43-51, drawn to a non-elected invention, and claims 5-7 and 21-37, drawn to a non-elected species have been canceled.

2. New claims 57-61 have been added and read upon the elected invention.

Accordingly, **claims 1-4, 8-20, 38-42, and 52-61 are the subject of examination** in the present Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-4, 8, 9, 11, 13-17, 19, 38-42 and 56-60 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of "inhibiting" an immune response in a patient comprising administering one of the N- and C-terminal blocked peptides AENK or KNNE as set forth in claim 10 or with a peptide of the structure B1-(X)_n-Asn-Q as set forth in claim 12 and the peptides themselves, does not reasonably provide enablement for the full scope of "modulating" an immune response or for asparaginyl endopeptidase inhibitors or their administration of in general. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The claims are broadly drawn to methods of "modulating" immune responses in a patient by administration of an asparaginyl endopeptidase inhibitor. It is noted that asparaginyl endopeptidase is an

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enzyme involved in the processing of proteins into antigenic epitopes to be displayed in association with MHC class II on the surface of antigen presenting cells. Therefore, an agent that inhibits asparaginyl endopeptidase would inhibit antigen processing and thereby inhibit an immune response to an antigen so processed. However, the claim recites "modulating," a term that would be understood by one of ordinary skill in the art as meaning the up-regulation or down-regulation of the immune response. However, the instant specification does not clearly set forth for the artisan a means for up-regulating an immune response, disclosing only compounds or agents that inhibit or down-regulate an immune response by inhibiting asparaginyl endopeptidase. It is not clear from the instant specification how the use of any of the disclosed compounds or methods could up-regulate an immune response. Accordingly, practice of the full scope of the claims drawn to modulating an immune response is not enabled, as up-regulation of an immune response would require undue experimentation on the part of the practitioner given the lack of guidance in the instant specification.

Furthermore, the claims read upon the use of any inhibitor of asparaginyl endopeptidase in the claimed method. However, the specification discloses only two specific terminally blocked tetramer peptides and peptides that satisfy the chemical formula $B1-(X)_n\text{-Asn-Q}$ as set forth in claim 12, for example. The specification does not disclose the use or suitability of any other type of asparaginyl endopeptidase inhibitor for administration to a patient for inhibition of enzyme activity and subsequent immune responsiveness. Additionally, other than the disclosed peptides that bind and interfere with the asparagine-cysteine cleavage site of the enzyme, the specification does not teach the artisan how to make any other type of inhibitor of the asparaginyl endopeptidase enzyme. The term includes in scope ALL agents or compounds that would inhibit the enzyme, such as potential inorganic or organic small molecules, carbohydrates or immunoglobulins, for example, even inclusive of inhibitors of transcription such as DNA-binding proteins or antisense molecules for example. However, the specification fails to disclose any of these molecules and does not teach the artisan how to make or how to use any of them.

In view of the quantity of experimentation necessary, the limited working examples, the unpredictability of the art, the lack of sufficient guidance in the specification and the breadth of the claims, it would take undue trials and errors to practice the claimed invention and this is not sanctioned by the statute.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 9-12, 15-20, 38 and 39 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Manoury et al (Nature [1998] 396:695-699; AI on form PTO-1449).

Manoury teaches the tetramer peptides KNNE and AENK as inhibitors of asparaginyl endopeptidase in cells and *in vivo* (see entire document, Abstract, Figure 3 and Figure 4 in particular). The prior art teaching clearly anticipates the claimed invention.


Conclusion

5. No claim is allowed.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Pierre VanderVegt whose telephone number is (571) 272-0852. The examiner can normally be reached on M-Th 6:30-4:00; Alternate Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (571) 272-0841. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

F. Pierre VanderVegt, Ph.D.
Patent Examiner
October 13, 2004


PATRICK J. NOLAN, PH.D.
PRIMARY EXAMINER
10/15/04